

**BLACKBERRY PLANT NAMED  
'SONOMA'**

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**1. BACKGROUND OF THE INVENTION**

This invention relates to a new cultivar of blackberry called 'Sonoma'. The new  
10 cultivar was developed from hybridization of the patented female cultivar 'Navaho', U.S.  
Plant Patent No. 6679, with the unpatented male cultivar 'Hull Thornless'. The parents  
were crossed in Spring 1991 whereafter fruit and seed were collected to produce seedlings  
for field planting in Watsonville, California in 1991. The new cultivar was selected in July  
1993 for its good flavor, thornless canes, season of production and firm, attractive fruit.  
15 The cultivar has been asexually propagated, and reproduced true to type plants by *in vitro*  
shoot tip culture.

**2. SUMMARY OF THE INVENTION**

20 The present invention provides a new and distinct blackberry cultivar named  
'Sonoma'. The variety is botanically identified as Rubus L. subgenus Rubus. The new  
cultivar produces a florican crop which begins in early July and continues until mid-  
September. The new blackberry variety is distinguished from other varieties by a number  
of characteristics as set forth in Table 1. In particular, the new cultivar is distinguished by  
25 its thornless canes with fruit of excellent flavor and firmness which ripens at a time of the  
year when few other similar cultivars exist.

**3. COMPARISON TO SIMILAR VARIETIES**

30 The varieties that we believe to be similar to 'Sonoma' from those known to us are  
the male parent 'Hull Thornless' and 'Chester', both unpatented cultivars. 'Sonoma' is  
particularly different from these cultivars by having slightly larger, more uniform shaped  
fruit, by ripening earlier, and having a less acidic flavor. Further detailed comparison to  
'Chester' is presented in Table 1.

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#### 4. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the fruit, leaves and shoot of the new cultivar, in color as nearly true as reasonably possible in color illustrations  
5 of this type.

Fig. 1 is a photograph showing a primocane shoot and mature leaf of 'Sonoma'.

Fig. 2 is a photograph of a 'Sonoma' fruiting lateral with fruit in various stages of development.

#### 5. DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new blackberry cultivar, 'Sonoma', is based upon recorded observations of plants and fruit grown between 1996 and 2000 in Watsonville, California, and is believed to apply to plants of the 'Sonoma' cultivar grown in  
15 similar conditions of soil and climate elsewhere. This description is in accordance with terminology used by the International Union for the Protection of New Varieties of Plants (UPOV). Throughout this specification, color names beginning with a small letter signify that the name of the color, as used in common speech, is aptly descriptive. Color data beginning with a capital letter and followed by an alphanumeric code indicate the most  
20 similar color designations as provided by the Royal Horticultural Society (RHS) Colour Chart published by the Royal Horticultural Society of London, England. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions.

##### 5.1 CHARACTERISTICS OF THE NEW VARIETY

Table 1 provides information on the plant and fruit characteristics of the new blackberry cultivar, 'Sonoma', compared with characteristics of the unpatented blackberry  
30 cultivars, 'Olallie' and 'Chester'. Both 'Olallie' and 'Chester' are currently important cultivars for fresh market shipping, and thus are comparable to the proposed use of the new invention, 'Sonoma'. Observations of 'Sonoma' and 'Chester' were taken in side-by-side comparison in 1999 and 2000.

The new blackberry cultivar is particularly characterized and distinguished from  
35 other cultivars by its fruit with excellent flavor and shipping quality. The fruit of 'Sonoma' is very attractive with a solid black color that rarely shows post harvest drupelet color reversion.

The canes of 'Sonoma' are thornless and of low to moderate vigor until well established. Yield of the new cultivar is moderate in comparison with other varieties.

Sonoma is distinguished from its pollen parent, 'Hull Thornless', by being earlier, less vigorous, and having larger less acidic fruit. Sonoma is distinguished from its seed parent, 'Navaho', by having greater vigor and larger fruit.

**TABLE 1**  
**PLANT CHARACTERISTICS OF 'SONOMA'**

		Sonoma	Olallie	Chester
10	<b>GENERAL</b>			
	Vigor	Low-moderate	Moderate-high	high
	Growth habit	semi-upright	trailing	semi-upright
	Productivity	medium	high	high
	Self fruitfulness	yes	yes	yes
15	Number of young shoots	medium	medium	medium
	<b>CANES</b>			
	Primocanes			
	Anthocyanin coloration	absent	present	present
	Spines	absent	present	absent
	color	-	purple	-
20	attitude of tip	-	horizontal	-
	texture	-	heavy	-
	presence and distribution on petioles	absent	present; irregularly distributed	absent
	density in central third of shoot	-	medium	-
	Internodal distance (cm) - central third	3	2.6	3.1
	of mature cane			
	Glaucosity on full grown shoot	weak	weak	weak
25	Strength of full grown shoot	strong	medium	strong
	Cane cross section	angular	rounded to angular	angular to grooved
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## Sonoma

## Oallie

## Chester

## LEAVES

5	Relief between veins	medium	medium	medium
	Number of leaflets	usually 5	usually 3	usually 5
	Leaf color	medium	medium	light
	upper side	139A, 147A	137A, 137B	147A
	underside	147B	147B	146A
10	Glossiness of upper surface	medium	medium	dull
	Leaf cross section	concave	concave-flat	concave
	Terminal leaflet			
	length (cm)	10.8	8.9	11.1
	width (cm)	8.5	7.6	9
15	shape	cordate	cordate	cordate
	tip	acuminate	acuminate	acuminate
	base	rounded	cordate	cordate
	margin	double serrate	double serrate	double serrate
	Lateral leaflet			
20	overlap of lateral leaflets	overlapping	overlapping	overlapping
	length (cm)	10.3	8.7	10.2
	width (cm)	7.1	6.1	7.1
	shape	ovate	ovate	ovate
	tip	acuminate	acuminate	acute
25	base	rounded to acute	acute	acute
	margin	double serrate	double serrate	serrate
	Petiole			
	mean length (cm)	9.4	5.3	7.9
	range	7.3-11.1	3.6-8.7	3.9-10.2
30	pigmentation of upper surface	reddish	green - slightly pink	purple
	pigmentation of underside	green	green - slightly pink	green - pinkish
	Length of stalklet	short	very short	medium
	Rachis length (cm) between terminal and adjacent lateral leaflets)	3.8	2.8	3.1
	Stipule orientation	erect	variable; clasping to erect	erect
35	Time of bud burst	late	early	late
	Time of beginning of flowering	late	early	late
	Flower size	medium-large	small to medium	small to medium
	Petal size			
	length (mm)	19.6	16.5	18.3
40	width (mm)	14	11.7	10.9
	Anthocyanin color of pedicel	absent	absent	present
	Intensity of pedicel coloration	-	-	weak
	Length of pedicel	short	long	short
	Flower number (third node from tip of lateral)	1.25	3.6	2

## Sonoma

## Olallie

## Chester

**FRUIT**

	Harvest season	mid-late	early	mid-late
	Dimensions	3.6	5.2	3.2
5	weight (g/fruit)	medium-small	medium	small
	size	2.4	3.3	1.9
	length (cm)	2.1	1.4	1.9
	width (cm)	medium-long	medium	medium - long
	Fruiting lateral length (in mid cane)	11.6	6.2	22.8
	mean number of fruit per lateral	8-16	3-9	17-40
	range			
	Shape	ovate to elliptic longer than broad	narrow ovate much longer than broad	round to ovate as long as broad
10	Color	black	purple-black to black	black
		183A	178A - 183B	184A
		187A	187A	200A - 202A
		202A	200A	202A
		medium	medium	firm
	Firmness	medium	medium - strong	medium
	Glossiness	12	9.7	9.9
	Soluble solids	9	13.3	9.9
15	Titrateable acidity (% as citric acid) (ml of added 0.1N NaOH to pH 8.1)	60	86	40
	Number of drupelets per fruit			

**5.2 NUCLEIC ACID FINGERPRINTING**

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Distinctive patterns of polymorphism can be detected using a variety of nucleic acid analysis methods. In one non-limiting example, molecular genetic maps can be produced using random amplified polymorphic DNA (RAPD) (Williams et al., 1990, "DNA polymorphisms amplified by arbitrary primers are useful as genetic markers", Nucleic Acids Res. 18(22):6531-5). Using a variety of oligonucleotide primers, alone or in combination, RAPD analysis of Sonoma, Chester, and Olallie yielded DNA fragment patterns that uniquely distinguish each of these genetically distinct genotypes.

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